



# OLR RESEARCH REPORT

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## **TATTOOS AND MRIs**

By: John Kasprak, Senior Attorney

You asked if there is medical evidence that magnetic resonance imaging (MRI) could cause burning at the site of certain tattoos. You also want to know if state law requires consumers to be informed of this situation.

### **TATTOOS and MRIs**

We were able to identify a reported case of a problem with an MRI and a tattoo due to the contents of the dye in the tattoo. In 1997, a 24 year old woman complaining of back pain was admitted to a hospital in Toronto, Ontario (Scarborough Grace Hospital). The doctor ordered an MRI. But soon after the procedure began, the patient complained of a burning pain right at the location of a tattoo on her left hip. The pain apparently stopped immediately, and swelling subsided within 12 hours. But a plastic surgeon at the hospital wondered what had gone wrong and requested tattoo inks from a national supplier. He then tested them to see if they could be affected by a magnetic field like the one used for an MRI.

Two of the inks, one black and one brown, contained so much iron oxide that droplets of dye could be pulled across a plastic sheet with a common horseshoe magnet. This ingredient could pose a hazard in an MRI machine since magnetic metals can convert its radio-frequency pulses into electricity. The surgeon believed that what the patient felt was either a weak electric current coursing through her skin or the

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pigmented skin being tugged from her body by the MRI's magnetic pull (See *Health*, September 1997, Vol.11 Issue 6, p.20).

## **STATE LAW ON TATTOOING**

### ***Connecticut***

Connecticut law does not address consumer warnings on this. Under Connecticut law, tattooing can be performed by a (1) physician; (2) osteopathic physician; (3) advanced practice registered nurse, working under the direction of a physician; (4) registered nurse working under the supervision, control and responsibility of a physician; (5) physician assistant working under the supervision, control and responsibility of a physician; or (6) technician providing service under the supervision of a physician according to Department of Public Health (DPH) regulations (CGS § 19a-92a(b)). The law also prohibits the tattooing of an unemancipated minor under 18 years old without the permission of the minor's parent or guardian (CGS § 19a-92a(c)). The law directs DPH to adopt regulations for regulating tattooing. As best as we can determine, these have not been adopted.

### ***Other States***

We have not identified any states that require consumers to be informed of the possible medical ramifications of MRIs and tattoos. Nor are we aware of any law or regulations specifying that only vegetable-based dyes can be used.

Montana is currently considering tattoo regulations somewhat related to these issues. One proposed regulation specifies that a tattooist "must use only sterile colors, dyes and pigments from reputable suppliers, stored in appropriate containers, to insure and maintain their integrity and sterility. After completing the tattooing procedure, the remaining dye or pigment in the disposable ink cup must be regarded as infectious waste, and must be discarded in accordance with (Rule XIII)" (Montana Proposed Tattoo Rule XII).

A tattooist who becomes aware of a client who has experienced an apparent reaction, allergy or sensitivity to a pigment used in tattooing must report the condition and pigment information to the Montana Department of Public Health and Human Services (Proposed Rule XII). Pigments or dyes disapproved or under recall by the U.S. Food and Drug Administration (FDA) or the state health department may not be used (Proposed Rule XII).

Ohio regulations require that tattooists use only dyes or inks manufactured by an established manufacturer and used as recommended by the manufacturer. Unless approved by the manufacturer, the tattooist cannot adulterate dye colors. All obvious injuries or infections directly resulting from the practice of tattooing which are known or become known to the operator must be reported to the board of health by the operator who must immediately advise the patron to see a physician (Ohio Regs. § 3701-9-05).